AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1 – 172 (Cancelled)

173. (New) An integrated circuit, comprising:

a semiconductor substrate having electrical circuitry coupled to an optoelectronic device disposed on a first surface of the semiconductor substrate, the semiconductor substrate having a notch extending from a second surface of the semiconductor substrate towards the first surface;

wherein the notch at least partially overlaps with the optoelectronic device on the first surface;

an optical reflector assembly disposed within the notch; wherein, the optical reflector assembly is physically configured for optical coupling with the optoelectronic device;

174. (New) The integrated circuit of claim 173, further comprising, an optical fiber disposed on the second surface of the semiconductor substrate, the optical fiber having a core region.

175. (New) The integrated circuit of claim 174, wherein, the optical reflector assembly is physically configured for optical coupling with the core region of the optical fiber.

176. (New) The integrated circuit of claim 173, wherein the optoelectronic device is one of, a laser, a vertical-cavity surface-emitting laser, a photodiode, a waveguide, an array waveguide grating, and an optical amplifier.

177. (New) The integrated circuit of claim 173, wherein the optoelectronic device is coupled to said semiconductor substrate via solderable bumps.

178. (New) The integrated circuit of claim 173, wherein the optoelectronic device is coupled to said semiconductor substrate via flip-chip mounting.

179. (New) The integrated circuit of claim 173, wherein the notch is at least partially filled with an optically transparent adhesive.

180. (New) The integrated circuit of claim 173, wherein the electrical circuitry comprises a metal trace to which the optoelectronic device is coupled.

181. (New) The integrated circuit of claim 174, wherein the notch comprises, an inclined surface; wherein, the inclined surface is inclined relative to the first surface and extends through at least the core region of the optical fiber.

182. (New) The integrated circuit of claim 173, wherein, the optical reflector assembly comprises at least one curved mirror.

183. (New) The integrated circuit of claim 182, wherein the curved mirror is a spherical mirror.

184. (New) The integrated circuit of claim 182, wherein, the optical reflector assembly further comprises a planar mirror.

185. (New) The integrated circuit of claim 182, wherein, the optical reflector assembly further comprises a glass substrate in contact with the curved mirror.

186. (New) The integrated circuit of claim 185, wherein, the optical reflector assembly is coupled to the notch at the at least one inclined surface via an optical adhesive attaching the glass substrate to the at least one inclined surface.

187. (New) The integrated circuit of claim 186, wherein the optical adhesive has a refractive index that is substantially similar to that of the core region of the optical fiber.

188. (New) The integrated circuit of claim 173, wherein said opening is filled with an epoxy; wherein the epoxy has a refractive index that is substantially similar to that of the core region of the optical fiber.

189. (New) The integrated circuit of claim 175, wherein the semiconductor substrate comprises a first layer and a second layer, the first layer adjacent to the first surface;

190. (New) The integrated circuit of claim 189, wherein the optoelectronic device is configured to operate with light of substantially a wavelength spectrum and the first layer is transparent for light of substantially the wavelength spectrum.

191. (New) The integrated circuit of claim 190, wherein, the optical reflector assembly is physically configured for optical coupling with the core region of optical fiber and the optoelectronic device.

192. (New) The integrated circuit of claim 175, wherein the optoelectronic device is configured to operate with light of substantially the wavelength spectrum and the semiconductor substrate is absorbing for light of substantially the wavelength spectrum.

193. (New) The integrated circuit of claim 192, wherein the semiconductor substrate has at least one opening between the first surface and the notch, the opening at least partially overlaps with the optoelectronic device.

194. (New) The integrated circuit of claims 193, wherein, the optical reflector assembly is physically configured for optical coupling the core region of optical fiber to the optoelectronic device.

195. (New) The integrated circuit of claim 175, wherein the substrate comprises of one or more of glass, silicon, and ceramic.